

Scientific Note

Arthropod Visitors at *Washingtonia filifera* (Wendl) Flowers¹

Although some species of palm are wind-pollinated, others are known to rely upon insects for pollination (Tomlinson, 1979, *Ann. Rev. Ecol. Syst.*, 10:85–107; Blombery and Rodd, 1982, *Palms*, Angus and Robertson, London). It has not yet been determined which of these two systems is operative for the desert fan palm, *Washingtonia filifera*, of the Sonoran Desert. McClenaghan and Beauchamp (1986, *Evolution*, 40:315–322) speculated that the lack of genetic differentiation among *W. filifera* populations might be the result of insect, rather than wind, pollination. Lepesme (1947, *Les insectes des palmiers*, Rue de Tournon, Paris) listed 20 insect species associated with *W. filifera* but, with the exception of *Dinapate wrightii*, did not describe the relationship between the insects and the palms. A first step in ascertaining the mechanism of pollination is to determine which, if any, insects visit *W. filifera* flowers.

On 20 and 21 July 1984, insects and other arthropods were observed or collected at inflorescences of three desert fan palms located in Palm Canyon, Riverside Co., Ca. Identifications of arthropods were made by the author, and Saul Frommer and Robert Wagner of the University of California at Riverside. These taxa are listed in Table 1 in decreasing frequency of occurrence. None of the species collected appeared in Lepesme's (1947) list.

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Table 1. Arthropods observed or collected on inflorescences of the desert fan palm, *Washingtonia filifera*. Listed in decreasing frequency of occurrence.

Scientific name	Common name	Order
<i>Apis mellifera</i>	Honey bee	Hymenoptera
<i>Polistes</i> *	Paper wasps	Hymenoptera
<i>P. major</i>		
<i>P. apachus</i>		
<i>P. dorsalis</i>		
<i>Xylocopa californica</i>	California carpenter bee	Hymenoptera
Dermestidae†	Hide beetles	Coleoptera
<i>Forelius foetidus</i>	ant—no common name	Hymenoptera
Stratiomyidae†	Soldier flies	Diptera
<i>Pepsis</i> sp.	Tarantula hawks	Hymenoptera
<i>Tripoxylon xantianum</i>	Mud dauber wasp	Hymenoptera
Alleculidae†	Comb-clawed beetles	Coleoptera
<i>Litoprosopus coachella</i>	Palm moth	Lepidoptera
<i>Tachytes</i> sp.	Sand wasps	Hymenoptera
<i>Prionyx parkeri</i>	Sand wasp	Hymenoptera
<i>Megachile</i> sp.	Leafcutter bees	Hymenoptera
Salticidae†	Jumping spiders	Araneae

* As a genus, the second most frequent visitor.

† Arthropod could only be identified to the family level.

The desert fan palm inflorescences observed in this study were visited by over 75 insects per hour. The most frequent visitor was the introduced honey bee (*Apis mellifera*) followed by paper wasps (*Polistes*), and the California carpenter bee (*Xylocopa californica*). The latter insect often destroys the flower as it feeds (Cornett, 1985, *Pan-Pacific Entomologist*, 61:251–252). Most insects would visit 5 or more flowers on a single inflorescence and then fly from the palm. It could not be determined if they immediately visited a second palm. Many of these species may be pollinators of *W. filifera* and the diversity and abundance of insects in general suggest that the flowers of this palm species are insect pollinated.

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